SEQUENCE LISTING

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TAMURA, TOMOHIRO

<120> METHOD OF PRODUCING RECOMBINANT PROTEIN IN BACTERIUM BELONGING TO GENUS RHODOCOCCUS

<130> 081356-0253

<140> 10/553,979
<141> 2005-10-20

<150> PCT/JP04/005585
<151> 2004-04-19

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<160> 168

<170> PatentIn Ver. 3.3

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<223> Description of Artificial Sequence: Synthetic primer sHN389

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gttgtacaag catggggact cgccgc 26

<210> 58
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer sHN390

<400> 58
gtagatctcc tccgactgca tcaacggcg 29

<210> 59
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<223> Description of Artificial Sequence: Synthetic primer sHN391

<400> 59
accgttaacc atcagtactt ggcgtggtg 29

<210> 60
<211> 18
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<400> 60
gaagctgacc aagttctc 18

<210> 61
<211> 24
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<223> Description of Artificial Sequence: Synthetic primer sHN335

<400> 61
gcccagggca catcggaatt catg 24

<210> 62
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<223> Description of Artificial Sequence: Synthetic primer sHN336

<400> 62
accgacactg acgccgatga acga 24

<210> 63
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<400> 63
cagcatgaac gtgatgagga atgtcagaag 30

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<400> 65
aagagctctc tagacgcatc cgaaacctcc accc 34

<210> 66
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<400> 66
acaacatgaa ctcggatgtg c 21

<210> 67
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<223> Description of Artificial Sequence: Synthetic primer sHN363

<400> 67
ccggactcat accggacatg g 21

<210> 68
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aaactagtca tggtcgctgt agtggaactc ac 32

<210> 69
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<400> 69
aacgttgtct ttatgttgga tc 22

<210> 70
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<223> Description of Artificial Sequence: Synthetic primer sHN373

<400> 70
aatgtacaag ttaacgaccg cgcgggtccc ggacg 35

<210> 71
<211> 95
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer MCS-1a

<400> 71
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tagatctctc gagcatcacc atcaccatca ctgaa 95

<210> 72
<211> 95
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<223> Description of Artificial Sequence: Synthetic primer MCS-1b

<400> 72
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cgtagaattc ccatatggtg atggtgatgg tggcc 95

<210> 73
<211> 98
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<223> Description of Artificial Sequence: Synthetic primer MCS-2a

<400> 73
tatgggccat caccatcacc atcacgccat gggaattcta cgtagcggcc gcggatccaa 60
gcttagatct ctcgagcatc accatcacca tcactgaa 98

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<223> Description of Artificial Sequence: Synthetic primer MCS-2b

<400> 74
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<210> 75
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<400> 75
tgacgccgtc cattatacct cctcacgtg 29

<210> 76
<211> 20
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer sHN218

<400> 76
gagaagggag cggccatggc 20

<210> 77
<211> 29
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<220>
<223> Description of Artificial Sequence: Synthetic primer sHN395

<400> 77
tttgttaact agagtaacgg gctactccg 29

<210> 78
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<223> Description of Artificial Sequence: Synthetic primer sHN396

<400> 78
aaggtacctc aacgacagga gcacgatc 28

<210> 79
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<400> 79
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<210> 80
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<223> Description of Artificial Sequence: Synthetic primer sHN398

<400> 80
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<210> 81
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<223> Description of Artificial Sequence: Synthetic primer sHN147

<400> 81
cgtgtacata tcgaggcggg ctccca 26

<210> 82
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<223> Description of Artificial Sequence: Synthetic primer sHN376

<400> 82
tttctagacg ccgtccatta tacctcctca cgtg 34

<210> 83
<211> 27
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<223> Description of Artificial Sequence: Synthetic primer sHN388

<400> 83
aaagttaacg agagttggcc gttgctc 27

<210> 84
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<223> Description of Artificial Sequence: Synthetic primer sHN120

<400> 84
gctgtacacc cgagaagctc ccagcg 26

<210> 85
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<223> Description of Artificial Sequence: Synthetic primer sHN160

<400> 85
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<210> 86
<211> 27
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer sHN337

<400> 86
aaccatggct agcaaaggag aagaact 27

<210> 87
<211> 24
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer sHN338

<400> 87
aagtgttggc caaggaacag gtag 24

<210> 88
<211> 20
<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer sHN339

<400> 88
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<210> 89
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<212> DNA
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<223> Description of Artificial Sequence: Synthetic primer sHN340

<400> 89
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<210> 90
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<400> 90
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<212> DNA
<213> Artificial Sequence

<220>
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
vector pTip-RC2 sequence

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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
vector pNit-RT1 sequence

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vector pNit-RT2 sequence

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<220>
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vector pNit-QC1 sequence

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<211> 6227
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic vector pNit-RC1 sequence

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<211> 6231
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic vector pNit-RC2 sequence

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tggtcggcac ggcaaccgtg caccttggga aatcgccgtt gatgcagtcg gaggagatcc 5280
acaagcgttg gaactctggc gcgagtttga gttcggttcg atgggacgcc gagcaatcgc 5340
atggtctcgt ggactgcgcg cccgagctgg tcttggcgta gaactcacgg atgctcagat 5400
tgtcgaacag gaagaatctg ccccggtcat ggttgcgatc attccggctc ggtcctggat 5460
gatgattcgg aactgtgcgc cttacgtttt cggagagatc cttggactcg tggaagcggg 5520
cgcgacctgg gaaaaccttc gtgaccactt gcattatcga ttgcctgcag cggatgtgcg 5580
gcctccgata atatcgattc gtaagtgaaa tgtcttggtg tgcaacaact ttcactcgta 5640
tgaaccacac ttgagggcat ccccccgata cttgccgctt tgaagctggg tgtctctctg 5700
tcagggctgc gatagcaccg cgtagcggct tggccttgac agagagacgg cctgtttcat 5760
ggttggtctc gggggggctga ccgggcagat agaaaaaggc cggccgattt ggctgccgac 5820
tatttttgca ggtaaaccca tctcatgagc atcaatgaac gtcccgttgg tatcgcagcg 5880
aatgcagctt cggtagacgt cgatggcgtt gtgatgggtg tgtatctctc gctttatggg 5940
caagaaatca cgctagatcg agatgatgcg ttcctactcc tcgatcgact tcaggacgcg 6000
ttgcgacctc aagccaacta agaaccctcc agatggtcta aacgaggcgc aaactcgctc 6060
ctgggcctgc gggcggagca ccgaagcgcg agcgaagcgg agcgcgtagg tgggggagcc 6120

tgcgggcagc ggcggcggag ccgccgcctt ggtaataggt gatcatcggg gccatagcag 6180
gtcagaggat gtttttacga tgactcatgc tcaccacgcc aagtactgat g 6231

<210> 107
<211> 124
<212> DNA
<213> Rhodococcus erythropolis

<220>
<223> mutated TipA gene promoter

<400> 107
cgcccgggct gagggagccg acggcacgcg gcggctcacg gcgtggcacg cggaacgtcc 60
gggcttgcac ctcacgtcac gtgaggaggt ataatggacg gcgtcagaga aggggacggc 120
catg 124

<210> 108
<211> 422
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<220>
<221> CDS
<222> (151)..(222)

<400> 108
gtgtacatat cgaggcgggc tcccacggcc gcccgggctg agggagccga cggcacgcgg 60

cggctcacgg cgtggcacgc ggaacgtccg ggcttgcacc tcacgtcacg tgaggaggca 120

gcgtggacgg cgtcagagaa gggagcggcc atg ggc cac cat cac cat cac cat 174
Met Gly His His His His His His
1 5

atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct cga gga 222
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg Gly
10 15 20

tgaactagtc gacccaccgg cacccgtgag cccctcgctg cgggtgccgg tgcgagggac 282

tgcaacacgc gaaacctgca caaacacacg gaggttggaa tgagcgccac ggacacaccc 342

gataccggcg ccgttccacc ccggttggtg accaccgctg gggcggctga cctgctacgc 402

cgcctcagcg ggactctagt 422

<210> 109
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 109
Met Gly His His His His His His Met Gly Ile Leu Arg Ser Gly Arg
1 5 10 15

Gly Ser Lys Leu Arg Ser Arg Gly
20

<210> 110
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 110
gtctagaaat aattttgttt aactttaaga aggagatata cc 42

<210> 111
<211> 416
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<220>
<221> CDS
<222> (151)..(216)

<400> 111
gtgtacatat cgaggcgggc tcccacggcc gcccgggctg agggagccga cggcacgcgg 60

cggctcacgg cgtggcacgc ggaacgtccg ggcttgcacc tcacgtcacg tgaggaggca 120

gcgtggacgg cgtcagagaa gggagcggcc atg gga att cta cgt agc ggc cgc 174
Met Gly Ile Leu Arg Ser Gly Arg
1 5

gga tcc aag ctt aga tct cga gga cat cac cat cac cat cac 216
Gly Ser Lys Leu Arg Ser Arg Gly His His His His His His
10 15 20

tgaactagtc gacccaccgg cacccgtgag cccctcgctg cgggtgccgg tgcgagggac 276

tgcaacacgc gaaacctgca caaacacacg gaggttggaa tgagcgccac ggacacaccc 336

gataccggcg ccgttccacc ccggttggtg accaccgctg gggcggctga cctgctacgc 396

cgcctcagcg ggactctagt 416

<210> 112
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 112
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg Gly
1 5 10 15

His His His His His His
20

<210> 113
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 113
gtctagaaat aattttgttt aactttaaga aggagatata cc 42

<210> 114
<211> 425
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<220>
<221> CDS
<222> (151)..(225)

<400> 114
gtgtacatat cgaggcgggc tcccacggcc gcccgggctg agggagccga cggcacgcgg 60

cggctcacgg cgtggcacgc ggaacgtccg ggcttgcacc tcacgtcacg tgaggaggca 120

gcgtggacgg cgtcagagaa gggagcgcat atg ggc cat cac cat cac cat cac 174
Met Gly His His His His His His
1 5

gcc atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct cga 222
Ala Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg
10 15 20

gga tgaactagtc gacccaccgg cacccgtgag cccctcgctg cgggtgccgg 275
Gly
 25

tgcgagggac tgcaacacgc gaaacctgca caaacacacg gaggttggaa tgagcgccac 335

ggacacaccc gataccggcg ccgttccacc ccggttggtg accaccgctg gggcggctga 395

cctgctacgc cgcctcagcg ggactctagt 425

<210> 115
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 115
Met Gly His His His His His His Ala Met Gly Ile Leu Arg Ser Gly
  1   5   10   15

Arg Gly Ser Lys Leu Arg Ser Arg Gly
             20   25

<210> 116
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 116
gtctagaaat aattttgttt aactttaaga aggagatata cat 43

<210> 117
<211> 416
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<220>
<221> CDS
<222> (151)..(216)

<400> 117
gtgtacatat cgaggcgggc tcccacggcc gcccgggctg agggagccga cggcacgcgg 60

cggctcacgg cgtggcacgc ggaacgtccg ggcttgcacc tcacgtcacg tgaggaggca 120

gcgtggacgg cgtcagagaa gggagcgcat atg gga att cta cgt agc ggc cgc 174
Met Gly Ile Leu Arg Ser Gly Arg
1 5

gga tcc aag ctt aga tct cga gga cat cac cat cac cat cac 216
Gly Ser Lys Leu Arg Ser Arg Gly His His His His His His
10 15 20

tgaactagtc gacccaccgg cacccgtgag cccctcgctg cgggtgccgg tgcgagggac 276

tgcaacacgc gaaacctgca caaacacacg gaggttggaa tgagcgccac ggacacaccc 336

gataccggcg ccgttccacc ccggttggtg accaccgctg gggcggctga cctgctacgc 396

cgcctcagcg ggactctagt 416

<210> 118
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 118
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg Gly
1 5 10 15

His His His His His His
20

<210> 119
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 119
gtctagaaat aattttgttt aactttaaga aggagatata cat 43

<210> 120
<211> 81
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<220>
<221> CDS
<222> (3)..(68)

<400> 120
cc atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct ctc 47
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu
1 5 10 15

gag cat cac cat cac cat cac tgaactagtc gac 81
Glu His His His His His His
20

<210> 121
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 121
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu Glu
1 5 10 15

His His His His His His
20

<210> 122
<211> 82
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<220>
<221> CDS
<222> (4)..(69)

<400> 122
cat atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct ctc 48
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu
1 5 10 15

gag cat cac cat cac cat cac tgaactagtc gac 82
Glu His His His His His His
20

<210> 123
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 123
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu Glu
1 5 10 15

His His His His His His
20

<210> 124
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 124
gtcagagaag ggagcggcca tg 22

<210> 125
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 125
gtctagaaat aattttgttt aactttaaga aggagatata ccatg 45

<210> 126
<211> 14
<212> PRT
<213> Rhodococcus erythropolis

<400> 126
Gly Leu Arg Ser Cys Gly Lys Gly Trp Ile Cys Pro Cys Cys
1 5 10

<210> 127
<211> 8
<212> PRT
<213> Rhodococcus erythropolis

<400> 127
Met Val Thr Met Thr Met Arg His
1 5

<210> 128
<211> 26
<212> PRT
<213> Rhodococcus erythropolis

<400> 128
Gly Cys Asp Gly Tyr Val Arg Ala Val Glu Ile Thr His Gly Lys Asn
1 5 10 15

Gly Trp His Val His Val His Ala Leu Leu
20 25

<210> 129
<211> 10
<212> PRT
<213> Rhodococcus erythropolis

<400> 129
Leu Ala Ala Tyr Leu Thr Lys Ile Ala Ser
1 5 10

<210> 130
<211> 21
<212> PRT
<213> Rhodococcus erythropolis

<400> 130
Trp Arg Glu Phe Glu Phe Gly Ser Met Gly Arg Arg Ala Ile Ala Trp
1 5 10 15

Ser Arg Gly Leu Arg
20

<210> 131
<211> 14
<212> PRT
<213> Arcanobacterium pyrogens

<400> 131
Gly Leu His Thr Cys Gly Ser Val Trp Ala Cys Pro Val Cys
1 5 10

<210> 132
<211> 8
<212> PRT
<213> Arcanobacterium pyrogens

<400> 132
Met Leu Thr Leu Thr Gln Arg His
1 5

<210> 133
<211> 26
<212> PRT
<213> Arcanobacterium pyrogens

<400> 133
Gly Leu Val Gly Tyr Val Arg Ala Asn Glu Ile Thr His Gly Lys His
1 5 10 15

Gly Trp His Val His Ser His Val Leu Ile
20 25

<210> 134
<211> 10
<212> PRT
<213> Arcanobacterium pyrogens

<400> 134
Ile Gly Asn Tyr Val Ser Lys Met Gln Thr
1 5 10

<210> 135
<211> 21
<212> PRT
<213> Arcanobacterium pyrogens

<400> 135
Trp Lys Glu Tyr Glu Lys Ala Ser Phe Gly Arg Arg Ala Leu Thr Trp
1 5 10 15

Ser Lys Gly Leu Arg
20

<210> 136
<211> 8
<212> PRT
<213> Brevibacterium lactofermentium

<400> 136
Met Phe Val Gly Thr Val Arg His
1 5

<210> 137
<211> 26
<212> PRT
<213> Brevibacterium lactofermentium

<400> 137
Val Glu His Thr Tyr Ser Asp Tyr Glu Val Thr Asp Ser Trp Ala Asn
1 5 10 15

Gly Trp His Leu His Arg Asn Met Leu Leu
20 25

<210> 138
<211> 10
<212> PRT
<213> Brevibacterium lactofermentium

<400> 138
Met Ala Thr Tyr Leu Ala Lys Gly Met Ser
1 5 10

<210> 139
<211> 20
<212> PRT
<213> Brevibacterium lactofermentium

<400> 139
Trp Arg Glu Tyr Glu Val Gly Ser Lys Asn Leu Arg Ser Ser Trp Ser
1 5 10 15

Arg Gly Ala Lys
20

<210> 140
<211> 14
<212> PRT
<213> Streptomyces phaeochromogenes

<400> 140
Gly Leu Val Arg Cys Gly Arg Ile Trp Phe Cys Pro Glu Cys
1 5 10

<210> 141
<211> 8
<212> PRT
<213> Streptomyces phaeochromogenes

<400> 141
Leu Val Thr Phe Thr Ala Arg His
1 5

<210> 142
<211> 27
<212> PRT
<213> Streptomyces phaeochromogenes

<400> 142
Gly Tyr Ile Gly Met Val Arg Ala Ala Glu Val Thr Arg Ser Lys Lys
1 5 10 15

Asn Gly Tyr His Pro His Leu Asn Leu Leu Val
20 25

<210> 143
<211> 10
<212> PRT
<213> Streptomyces phaeochromogenes

<400> 143
Leu Ile Glu Tyr Leu Thr Lys Asn Gln Asp
1 5 10

<210> 144
<211> 21
<212> PRT
<213> Streptomyces phaeochromogenes

<400> 144
Trp Ala Gln Tyr Glu Glu Ala Leu Ala Gly Arg Arg Ala Ile Glu Trp
1 5 10 15

Thr Arg Gly Leu Arg
20

<210> 145
<211> 14
<212> PRT
<213> Streptomyces lividans

<400> 145
Gly Leu Met Arg Cys Gly Arg Ile Trp Leu Cys Pro Val Cys
1 5 10

<210> 146
<211> 8
<212> PRT
<213> Streptomyces lividans

<400> 146
Leu Val Thr Phe Thr Ala Arg His
1 5

<210> 147
<211> 26
<212> PRT
<213> Streptomyces lividans

<400> 147
Gly Tyr Val Gly Met Arg Ala Thr Glu Val Thr Val Gly Gln Ile Asn
1 5 10 15

Gly Trp His Pro His Ile His Ala Ile Val
20 25

<210> 148
<211> 10
<212> PRT
<213> Streptomyces lividans

<400> 148
Leu Ala Glu Tyr Ile Ala Lys Thr Gln Asp
1 5 10

<210> 149
<211> 21
<212> PRT
<213> Streptomyces lividans

<400> 149
Trp His Glu Tyr Glu Arg Ala Thr Arg Gly Arg Arg Ala Ile Glu Trp
1 5 10 15

Thr Arg Tyr Leu Arg
20

<210> 150
<211> 14
<212> PRT
<213> Streptomyces nigrifaciens

<400> 150
Gly Leu Met Arg Cys Gly Arg Ile Trp Leu Cys Pro Val Cys
1 5 10

<210> 151
<211> 8
<212> PRT
<213> Streptomyces nigrifaciens

<400> 151
Leu Val Thr Phe Thr Ala Arg His
1 5

<210> 152
<211> 26
<212> PRT
<213> Streptomyces nigrifaciens

<400> 152
Gly Tyr Val Gly Met Arg Ala Thr Glu Val Thr Val Gly Gln Ile Asn
1 5 10 15

Gly Trp His Pro His Ile His Ala Ile Val
20 25

<210> 153
<211> 10
<212> PRT
<213> Streptomyces nigrifaciens

<400> 153
Leu Ala Glu Tyr Ile Ala Lys Thr Gln Asp
1 5 10

<210> 154
<211> 21
<212> PRT
<213> Streptomyces nigrifaciens

<400> 154
Trp His Glu Tyr Glu Arg Ala Thr Lys Gly Arg Arg Ala Ile Glu Trp
1 5 10 15

Thr Arg Tyr Leu Arg
20

<210> 155
<211> 30
<212> DNA
<213> Rhodococcus erythropolis

<400> 155
cgagcgaagc ggagcgcgta ggtgggggag 30

<210> 156
<211> 27
<212> DNA
<213> Arcanobacterium pyrogens

<400> 156
caggtatgcg gaaaacttta ggaacaa 27

<210> 157
<211> 32
<212> DNA
<213> Brevibacterium lactofermentium

<400> 157
gaaatagaag tgaacacctc taaggaaccg ca 32

<210> 158
<211> 31
<212> DNA
<213> Streptomyces phaeochromogenes

<400> 158
ctggcaaaaa gggacgccta ggtaaagggt t 31

<210> 159
<211> 30
<212> DNA
<213> Streptomyces lividans

<400> 159
gaggcaaaag cgaacacctt gggaaagaaa 30

<210> 160
<211> 32
<212> DNA
<213> Streptomyces nigrifaciens

<400> 160
gacccaaaac gtgtcgcgcc ttgggaaaga aa 32

<210> 161
<211> 270
<212> DNA
<213> Rhodococcus erythropolis

<400> 161
tgagggcatc cccccgatac ttgccgcttt gaagctgggt gtctctctgt cagggctgcg 60
atagcaccgc gtagcggctt ggccttgaca gagagacggc ctgtttcatg gttggtctcg 120
gggggctgac cgggcagata gaaaaaggcc ggccgatttg gctgccgact atttttgcag 180
gtaaacccat ctcatgagca tcaatgaacg tcccgttgta tcgcagcgcg tgcagcttcg 240
gtagacgtcg atggcgttgt gatgggtgtg 270

<210> 162
<211> 170
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<400> 162
tgtacatatc gaggcgggct cccacggccg cccgggctga gggagccgac ggcacgcggc 60
ggctcacggc gtggcacgcg gaacgtccgg gcttgcacct cacgtcacgt gaggaggcag 120
cgtggacggc gtctagaaat aattttgttt aactttaaga agaagatata 170

<210> 163
<211> 95
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence

<220>
<221> CDS
<222> (3)..(92)

<400> 163
cc atg ggc cac cat cac cat cac cat atg gga att cta cgt agc ggc 47
Met Gly His His His His His His Met Gly Ile Leu Arg Ser Gly
1 5 10 15

cgc gga tcc aag ctt aga tct ctc gag cat cac cat cac cat cac tga 95
Arg Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
20 25 30

<210> 164
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 164
Met Gly His His His His His His Met Gly Ile Leu Arg Ser Gly Arg
1 5 10 15

Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
20 25 30

<210> 165
<211> 99
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<220>
<221> CDS
<222> (4)..(96)

<400> 165
cat atg ggc cat cac cat cac cat cac gcc atg gga att cta cgt agc 48
Met Gly His His His His His His Ala Met Gly Ile Leu Arg Ser
1 5 10 15

ggc cgc gga tcc aag ctt aga tct ctc gag cat cac cat cac cat cac 96
Gly Arg Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
20 25 30

tga 99

<210> 166
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 166
Met Gly His His His His His His Ala Met Gly Ile Leu Arg Ser Gly
1 5 10 15

Arg Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
20 25 30

<210> 167
<211> 197
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 167
actagtcgac ccaccggcac ccgtgagccc ctcgctgcgg gtgccggtgc gagggactgc 60
aacacgcgaa acctgcacaa acacacggag gttggaatga gcgccacgga cacacccgat 120
accggcgccg ttccaccccg gttggtgacc accgctgggg cggctgacct gctacgccgc 180
ctcagcggga ctctagt 197

<210> 168
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic 6xHis tag

<400> 168
His His His His His His
1 5